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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/606,436

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Steven M. Burns

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SUITE 1201

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EXAMINER

IP, SIKYIN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/606,436	Applicant(s) BURNS ET AL.	
	Examiner Sikyin Ip	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 34-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

~~said cleaning step comprising injecting introducing a cleaning gas into the furnace chamber only at a center of an area where the at least one workpiece is to be located. ~~the said furnace chamber~~~~

Claim 34 is indefinite because of

It is unclear "center of an area" of said furnace chamber or workpiece. Because more than one workpiece can be treated, the furnace chamber can be filled with workpieces. Furthermore, the workpiece can be placed any where inside furnace chamber. Thus, injecting gas where workpieces are in the furnace chamber reads on treating the entire or any portion of furnace chamber.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 34-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6042898 to Burns et al in view of JP 62139810 (PTO-1449) or JP 2003027209 (PTO-1449).

Burns discloses steps of coating, diffusion heat treatment, peening, carbonizing, grit blasting, ionized gas cleaning, and coating. The features relied upon described above can be found in the reference(s) at: col. 3, line 31 to col. 4, line 37 and col. 6, example 2. Burns does not disclose step of cleaning a furnace, cleaning the workpiece during diffusion heat treatment step and gas flow rate. But, cleaning workpiece at any step is contemplated within ambit of ordinary skill artisan when the workpiece is contaminated. Cleaning contaminated furnace chamber without workpiece in contaminated furnace chamber is contemplated within ambit of ordinary skill artisan in order to avoid contaminating the workpiece. With respect to the gas flow rate that it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the gas flow rate in order to balance cost of gas and cleanness of the gas, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). However, JP 62139810 (abstract) or JP 2003027209 (abstract) teaches cleaning a furnace with inert gas in an vacuum furnace/chamber. Cleaning a furnace includes cleaning center of furnace. Treating gas is transported by a pipe (40)

to center of the furnace (see JP 2003027209 drawings 1-3 and abstract). The gas transported pipe (40) reads on claimed manifold. JP 62139810 in abstract teaches to heat inside of the heat treatment furnace at temperature higher than heat treatment temperature in order to remove moisture and oil. Although specific temperature range has not been specified, it teaches temperature difference sufficient high to remove contaminants. Therefore, it would have been obvious to one having ordinary skill in the art of the cited references at the time the invention was made to clean a heat treatment furnace as taught by JP 62139810 or JP 2003027209 in order to improve/provide a clean furnace for heat treatment. In re Venner, 120 USPQ 193 (CCPA 1958), In re LaVerne, et al., 108 USPQ 335, and In re Aller, et al., 105 USPQ 233.

Response to Arguments

Applicant's arguments filed January 29, 2010 have been fully considered but they are not persuasive.

Applicant argues that Burns et al fail to teach cleaning furnace chamber before heat treatment steps. But, cleaning contaminated furnace before heat treatment is contemplated within ambit of ordinary skill artisan in order to avoid contaminating workpiece.

~~indefinite. By the present amendment, Applicant has made it clear that the gas is being injected only at a center of an area of the furnace chamber where the at least one workpiece is to be~~

Applicant argues that “located. ~~Clearly, this limitation does not mean that the gas is~~” and

~~mean the center of the furnace chamber. The area being discussed is the area of the furnace chamber where the at least one workpiece is to be placed. This may be the center of the furnace chamber or it may be some other location in the furnace chamber. It depends on where the workpieces are being placed.~~ ” Since the location of

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workpiece can be any where in the furnace chamber, cleaning gas can be introduced any where in furnace chamber.

Applicant argues that improvements in the treated workpieces can be shown in instant Figures 2 to 4. But, first it is unclear what made the improvement if improvement does exist. Second, there is no measurable data comparison to show the difference.

~~vacuum chamber. This portion of Burns et al. is not describing the claimed technique for cleaning a furnace chamber prior to~~

Applicant argues that “~~performing a diffusion heat treating step. Burns et al. is~~”

But, cleaning a contaminated furnace before heat treatment is contemplated within ambit of ordinary skill artisan in order to avoid contaminating workpiece.

~~now clearly spelled out in amended claim 34. Further, there is no disclosure in Burns et al. of injecting the gas used to remove the contaminants only at the center of the location where~~

Applicant argues that “~~the workpieces are to be placed. Still further, there is no~~”

But, the location of workpiece can be any where in the furnace chamber. Therefore, cleaning gas can be introduced any where in furnace chamber.

Applicant's argument with respect to JP 62139810 and JP 2003027209 is noted. Examiner reiterates the response in paragraph immediately above.

~~office action. If the Examiner is not citing Burns for teaching the cleaning of the furnace before the heat treatment, then the~~

Applicant argues that “~~cleaning portion of Burns is irrelevant. As for the diffusion~~”

But, as acknowledged by applicant in instant remarks (page 10, paragraph bridging

~~As for cleaning a contaminated furnace before heat treatment is contemplated, there is no question that this is known in the prior art. The first two paragraphs on page 4 of~~

pages 10-11) that “~~the specification discuss such prior art practices. What are~~”

Cleaning a contaminated furnace before heat treatment is contemplated within ambit of ordinary skill artisan in order to avoid contaminating workpiece.

Applicant's argument in paragraph bridging pages 10-11 of instant remarks is noted. But, it is unclear how the claimed steps to clean pockets, voids, and etc.

Applicant's argument in page 11, first full paragraph of instant remarks is noted. But, the location of workpiece can be any where in the furnace chamber, cleaning gas can be introduced any where in furnace chamber.

Applicant argues that none of cited references teaches the claimed flow rate. But, applicants have not shown the claimed flow rate is critical or possessed unexpected result. It would have been obvious to one having ordinary skill in the art at the time the invention was made to manipulate the flow rate in order to remove contaminants, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121 and 37 C.F.R. Part §41.37 (c)(1)(v).

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Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Thursday from 5:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sikyin Ip/
Primary Examiner, Art Unit 1793

May 10, 2010